

ART. XX.—*On a new application of Lever Power in the Extraction of Teeth.* By the Hon. DAVID E. WILKIE, M.D., M.L.C.

(With a Plate.)

[Read before the Institute, January 23, 1860.]

THE extraction of teeth is an operation of such frequent occurrence, that almost every one understands the different methods that are used for this purpose.

It is not my object, therefore, to detain you with a historical account of the different instruments now in use for the extraction of teeth.

I shall simply exhibit some of these instruments, and point out wherein they are defective in principle, in order that you may be in a position to understand the importance of discovering some new application of power for the more direct and easy extraction of teeth.

I shall then endeavour to show that a very simple instrument, which I have recently invented, furnishes a new application of lever power in the extraction of teeth, which I believe is calculated, in a great measure, to surmount the difficulties that are frequently experienced in this operation.

It may perhaps be thought that this subject is strictly medical, and that I should rather have brought my instrument under the notice of the Medical Society, but it is scarcely necessary for me to say that the extraction of teeth has, of late years, been almost entirely taken out of the hands of the medical profession, and that very few medical men feel any particular interest in the subject. My object is, therefore, to submit my instrument to the judgment of scientific men, in the hope that its merits, if it has any, may invite the attention of dentists generally, and that the public at large may reap the advantages of the invention, if it really possesses any advantages. If any apology were necessary for introducing this subject to the Institute, I might refer to Sir Charles Bell, Marshall Hall, Sir Benjamin Brodie, and other eminent medical men, who first published many of their original observations and experi-

ments, and many of their important discoveries in anatomy and physiology, in the valuable papers which they read before the Royal Society of London.

During my early residence in Melbourne I had frequent occasion to extract teeth, and have therefore some practical knowledge of the difficulties that are sometimes experienced. The chief difficulty is met with in the case of the inferior molar teeth, and I have seen the strongest efforts sometimes fail in extracting them. On two occasions the common key broke in my own hands, from the force required to be used.

The key, however, is not by any means a perfect instrument, as the extracting force is not applied in the axis of the tooth, but at a considerable lateral angle, and therefore at a great disadvantage. On this account the forceps is now preferred by surgeons and dentists; but this instrument, especially in the case of the molar teeth, requires peculiar skill, and strength of wrist which very few possess, and the operation of extraction with the forceps is often much more formidable and much more painful than with the key.

I shall now simply apply the key to one of the inferior molar teeth, and you will see at once that the lever power employed is very far from being in the axis of the tooth, and that there is even considerable danger of the tooth being broken across, and of the jaw itself being injured, when much force is used. I may dismiss the key, however, as it is now almost abandoned by dentists, and direct your attention to the forceps.

This instrument has been used in various forms, some of which are exhibited, but of these it is unnecessary to speak. In all the intention is that the extracting force should be applied in a line with the axis of the tooth; and when long practice has given unusual skill, and extraordinary strength of wrist to the operator, the forceps may be regarded as in many respects a perfect instrument. It is impossible, however, to deny that the forceps is not and cannot be used by most operators in this skilful and powerful manner; and, in point of fact, it is almost always used in the first instance, to shake the tooth from side to side, and to twist it in its socket before the extracting force is applied; and without great skill and great strength, many teeth cannot be extracted by the direct application of power in a line with the axis of the tooth.

Thus, with all the advantages of daily practice, I have

sometimes seen the most skilful dentists extract the molar teeth with difficulty, and at the expense of protracted suffering to the patient. This suffering might no doubt be obviated by the use of chloroform, but the many fatal accidents that have occurred in the use of this powerful agent, renders it very undesirable to be used except on special occasions, and when a medical practitioner is present for the purpose of administering it.

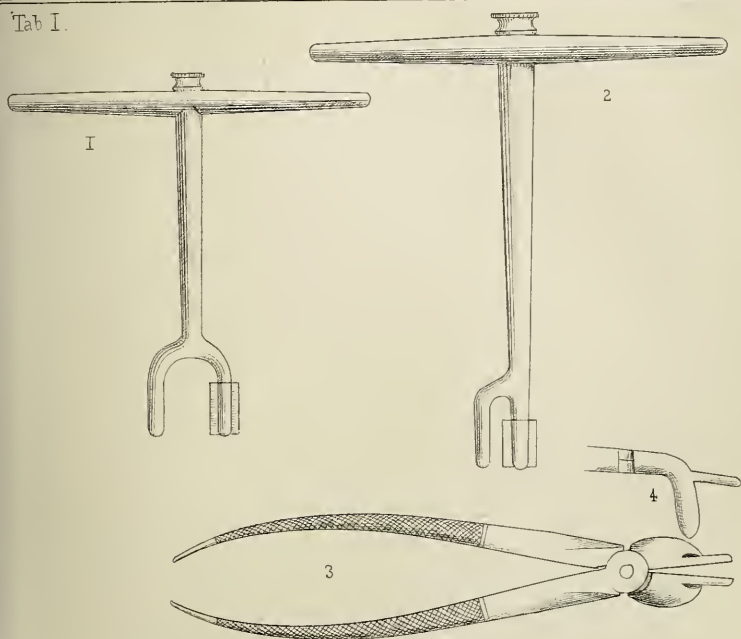
I trust, therefore, that I have shown that a new and more effective application of power in the extraction of the molar teeth is a very important desideratum.

The principle on which this new instrument acts is that of the lever, a fulcrum being obtained from a sound tooth, at a convenient distance from the tooth to be extracted. The lever can thus be used either on the adjoining tooth or on any other within reach. The only objection that can be urged against the principle of its action, is the possibility in certain cases of a very strong pressure on a sound tooth proving injurious to it. I do not anticipate any such injurious consequence when the instrument is used with ordinary care and judgment, but against such possible accidents with the lever we must bear in mind the rough usage to which the jaws of patients have hitherto been subjected both with the key and the forceps, and the many serious injuries that have been caused by these instruments, and especially by the common key; and if the forceps has been productive of less injurious consequences than the key, I feel quite confident that the direct pressure of the lever on a sound tooth will be much less injurious to the jaw, than the violent shaking and twisting motion with which the forceps is frequently used. If the principle of this lever therefore be admitted to be correct, the great power which it possesses must give it, in difficult cases, a very great advantage over all other instruments for extracting teeth.

There are two modifications of this lever power which I shall now endeavour to describe:—

The first (Fig. 1, Table 1) which will probably be found the more easy of application, consists of a shaft and handle, being similar in this respect to a common tooth key, the shaft terminating in two short arms like a fork—on one of these arms is a small plate or rest, which is moveable, and protected with leather. This rest is that part of the instrument which is placed on the tooth or teeth selected as a fulcrum; the other arm of the instrument being employed to raise the forceps when it

Tab I.



Tab. II.

